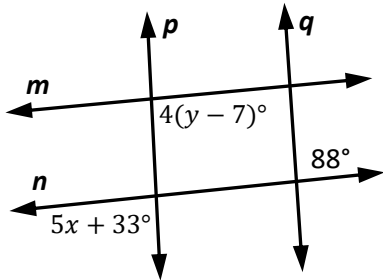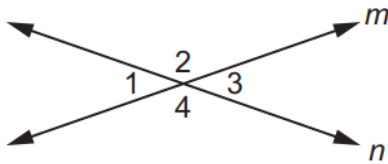# Lines and Angles

Lines and Angles

1) In the diagram, $m \parallel n$ and $p \parallel q$.

What are the values of x and y?

    A. $x = 11$ and $y = 30$ - correct

    B. $x = 11$ and $y = 92$

    C. $x = 88$ and $y = 30$

    D. $x = 88$ and $y = 92$

2) In the diagram below, line m intersects line n.

Select the choice that completes the proof that vertical angles ∠1 and ∠3 are congruent.

	Statements	Reasons
1.	Line m intersects line n.	Given
2.	∠1 and ∠2 form a linear pair. ∠2 and ∠3 form a linear pair.	Definition of a linear pair
3.	$m\angle 1 + m\angle 2 = 180°$ $m\angle 2 + m\angle 3 = 180°$	Angles that form a linear pair have measures that sum to 180°
4.	?	?
5.	$m\angle 1 = m\angle 3$	Subtraction Property of Equality
6.	∠1 ≅ ∠3	Definition of congruent angles

    A. $m\angle 1 + m\angle 3 = 180°$; Definition of a linear pair

    B. $m\angle 1 + m\angle 3 = 180°$; Angle addition postulate

    C. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$; Substitution - correct

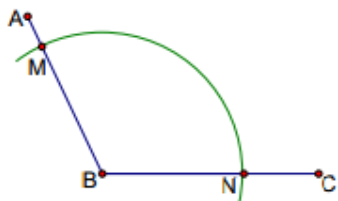   D. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$; Symmetric Property of Equality

3) In the diagram below, $\overline{CD}$ is the perpendicular bisector of $\overline{AB}$. Based on this information which other statements can be proven to be true? Select All that apply.
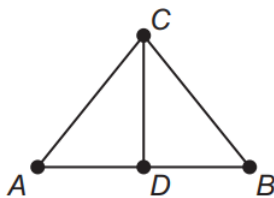

    A. $\overline{AC} \cong \overline{AD}$

    B. $\overline{AC} \cong \overline{CB}$ - correct

    C. $\overline{AD} \cong \overline{DB}$ - correct

    D. $\overline{CB} \cong \overline{CD}$

    E. $\overline{CB} \cong \overline{AB}$

Lines and Angles

4) Tina is constructing an angle congruent to ∠*ABC*. What is her next step?

A. Using *MN* as the radius, place the center of the compass on *P* and construct an intersecting arc. - correct

B. Using *MB* as the radius, place the center of the compass on *P* and construct an intersecting arc.

C. Using *MN* as the radius, place the center of the compass on *Y* and construct an intersecting arc.

D. Using *MN* as the radius, place the center of the compass on *X* and construct the intersecting arc.
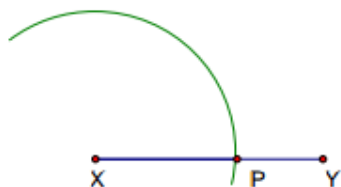
5) A student followed the given steps below to complete a construction.

Step 1: Place the compass on one endpoint of the line segment.

Step 2: Extend the compass from the chosen endpoint so that the width of the compass is more than half the distance between the two points.

Step 3: Without changing the compass width, draw an arc on each side of the line segment.

Step 4: Without changing the compass width, repeat the process from **Step 3** on the other endpoint of the line segment, making sure that the two new arcs intersect the first two arcs that were constructed.

Step 5: Plot a point on the intersection of the two arcs on each side of the line segment.

Step 6: Use a straightedge to draw a line between the two points.

Which type of construction is best represented by the steps given above?

A. perpendicular bisector of a line segment

B. angle congruent to a given angle - correct

C. parallel line through a point not on the given line

D. bisector of an angle